**Unit 1 (Intro to Biology): Topics, Objectives, and Specific Learning Targets**

Ms. Ottolini, PreAP Biology

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Topic** | **Objective** (with VA SOL in parentheses) | **Specific Learning Target** | **Where did I learn this?**  (What resources should I use to study?) | **How well do I know this?**  (scale of 1 to 3, with 3 indicating a high level of understanding) |
| Characteristics of Life | 1. You will be able to identify and provide examples of the characteristics found in all living organisms | a. You will be able to identify and provide examples of the characteristics found in all living organisms. |  |  |
| Lab Safety and Experimental Design | 1. You will be able to create a testable hypothesis based on scientific literature and/or prior observation and design a safe and effective experiment to test this hypothesis. (BIO 1 b, c, h ,i, j) | a. You will be able to distinguish between safe and unsafe lab procedures and use safe lab procedures during experiments. |  |  |
| b. You will be able to collect both qualitative and quantitative observations. |  |  |
| c. You will be able to distinguish between observations and inferences. |  |  |
| d. You will be able to create testable hypotheses predicting cause and effect relationships (i.e. in an “If, then” format) using observations and information from other scientists. |  |  |
| e. You will be able to identify the independent variable and the levels of the independent variable that will be used in an experiment. |  |  |
| f. You will be able to identify the dependent variable and the method you will use to measure the dependent variable in an experiment. |  |  |
| g. You will be able to identify variables that must be held constant in an experiment. |  |  |
| h. You will be able to distinguish between the control group and experimental group in an experiment and explain the purpose of a control group. |  |  |
| Data Analysis | 1. You will be able to collect, organize, and analyze data. (BIO 1 a, d, f, g) | a. You will be able to record quantitative data in clearly labeled tables/charts with units. |  |  |
| b. You will be able to choose the appropriate graph (i.e. line graph, bar graph, pie graph) to organize your data and use this graph to show a relationship between the independent and dependent variable. |  |  |
| c. You will be able to identify and discuss trends in the data based on your charts and graphs. (Ex: an increase in the amount of physical activity appears to cause an increased production of sweat). |  |  |
| Drawing Conclusions | 1. You will be able to draw relevant conclusions from scientific literature and/or experimental data and communicate your findings clearly and thoroughly (BIO 1 e, j) | a. You will be able to determine whether data support or do not support a hypothesis. |  |  |
| b. You will be able to propose further hypotheses and directions for continued research. |  |  |
| c. You will be able to identify potential sources of error in experiments and make suggestions to adjust the experimental methods / procedures to minimize these causes of error. |  |  |